



Secure Your Energy Future

Session 8: California Challenges and Solutions

Energy Efficiency and Distributed Generation Opportunities for California Public Agencies

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Energy Commission & Its Functions

**Energy policy and
information advisor to the
California governor and
legislature**

- **Major functions:**

- ❑ License power plants
- ❑ Assess current and future energy trends
- ❑ Advance energy technologies
- ❑ **Promote energy efficiency and renewable energy**



Benefits for Energy Efficiency and Renewable Energy

- ☑ Reduce Growth Rate of Electricity Demand
- ☑ Improve Productivity
- ☑ Improve Environment
- ☑ Create Jobs
- ☑ Save Money
- ☑ Help support needed infrastructure improvement



Energy Efficiency, Renewables and Demand Analysis Division

Four major activities

- ☑ **Regulations** – Building and Appliance Standards
 - ◆ Title 24 (Part 6) “Energy Codes” for new construction and major renovations
 - ◆ Appliance Standards
- ☑ **Analysis** -- Energy Demand Analysis
- ☑ **Renewable** Energy Incentives
- ☑ **Services** -- Efficiency Program Services –
 - ◆ Efficiency Programs / Outreach
 - ◆ Technical assistance,
 - ◆ Low interest loans, Financing



Public Agency Energy Use

Category	Estimated Square Footage (1000's)	Estimated Annual Energy use (dollars)
K-12 School	708,135	\$708,135,000
Local Govt (water treatment/ distrib.)	n/a	\$250,000,000
Local Govt (Facilities)	250,000	\$500,000,000
Community Colleges	52,200	\$104,400,000
State Facilities ¹	251,000	\$527,100,000
State Facilities Leased	15,000	\$31,500,000
Total	1,276,335	\$2,089,635,000

¹ Includes, UC., CSU, DOC

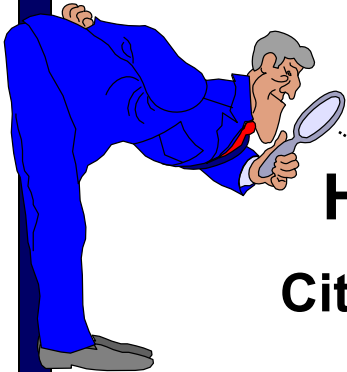


Market Realities Influencing Energy Efficiency decisions by Public Agencies

- ① Tight Public Budgets
- ② High Retail Consumer Energy Prices
- ③ Low interest rates – access to third party capital not always a straight forward process
- ④ Continued policy support and incentives for Energy Efficiency/ Distributed Generation



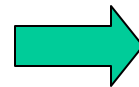
Tight Public Budgets



How Much do:

Cities Spend on Energy?

- ◆ between 2 and 8 percent of their annual city budget



- as much as the total combined funds for parks, recreation and libraries

Counties Spend on Energy?

- ◆ About 3 percent of their annual budget.



- as much as on public “ways and facilities” (roads, transportation, parking)

Public School Districts Spend on Energy?

- ◆ About 4 percent of their annual budget.



- as much as on books and supplies.

Placing Energy Costs in Perspective

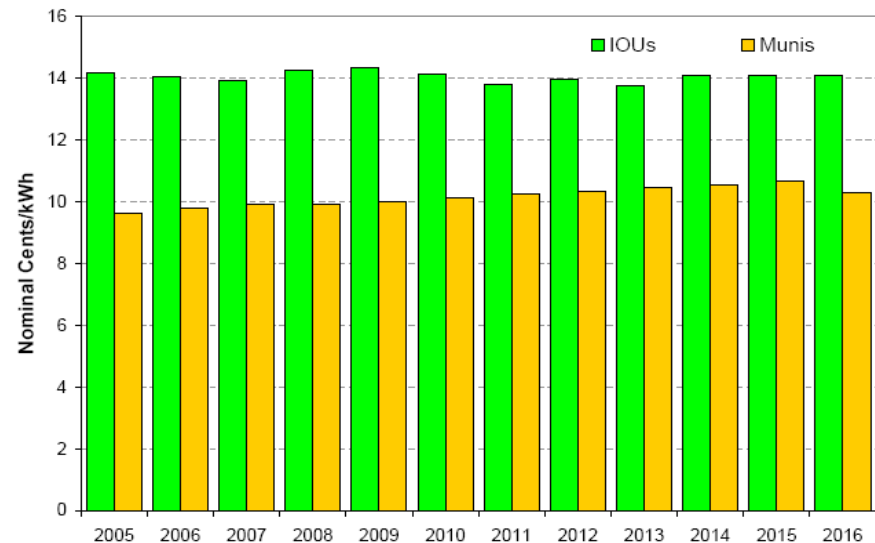


California Retail Rate Forecast 2005-2016

Key Findings —
California Energy Commission

- ☐ Rates will tend to be flat in IOU service territories.
- ☐ IOU Rates will be higher than CA municipal rates
- ☐ Municipal rates trend upward

IOU & Municipal Retail Rate Outlook » Commercial «



Historically Low Interest Rates

Tax- exempt funding generally available

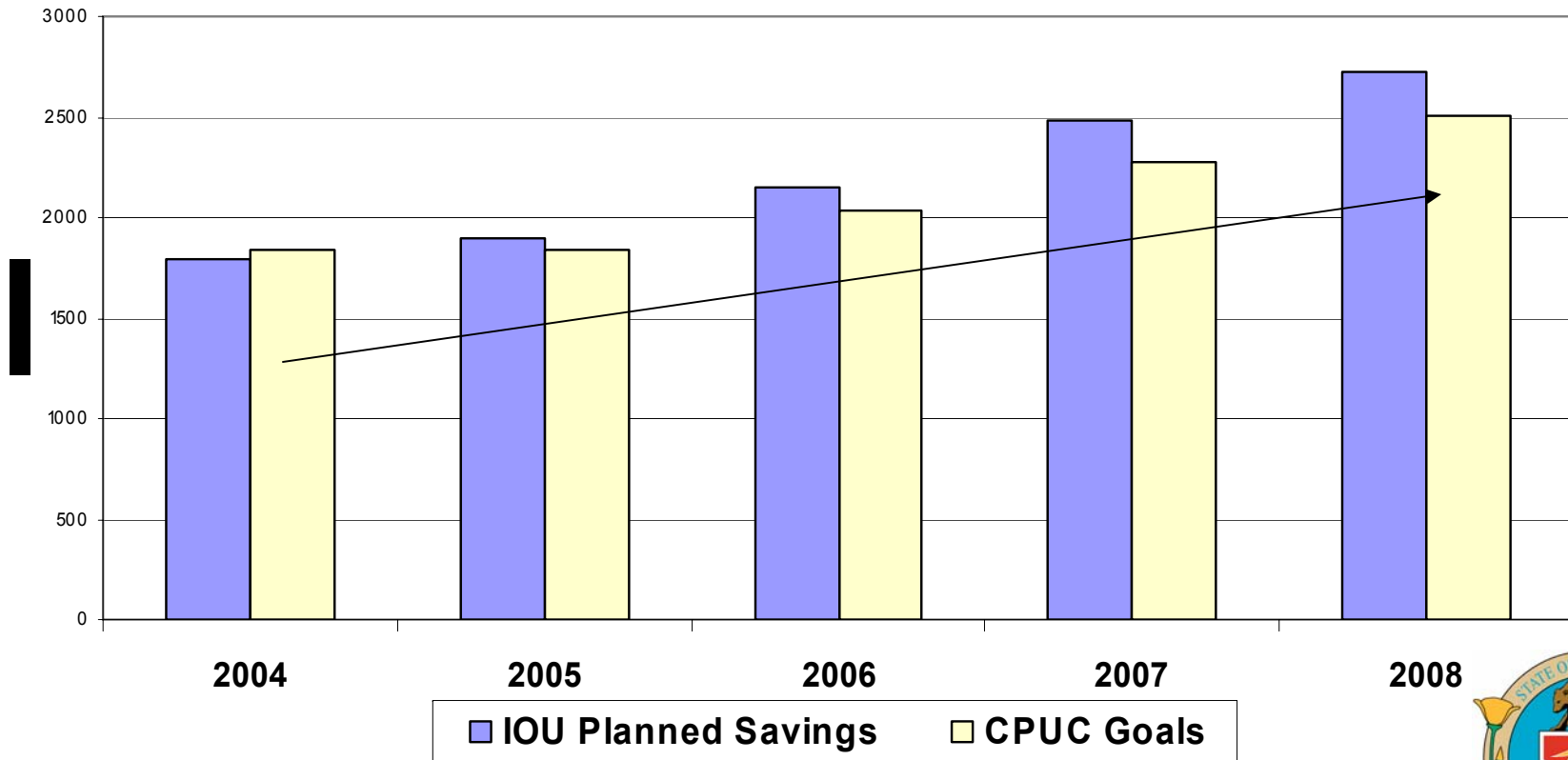
- Municipal Lease Market
- Revenue Bond Market
 - *4.1-4.5 percent interest rates on 10 year municipal leases / bonds for energy projects.*

Often no clear and concise guidelines for public energy managers for gaining access to funding.



California Efficiency Goals for Investor Owned Utilities

- 2006-2008 programs increasingly “aggressive”
 - \$2.1 billion in PGC and procurement funding.



Funding for 2006-2008 Programs

	2006 (Millions\$)	% Increase (annual)	2007 (Millions\$)	% Increase (annual)	2008 (Millions\$)	% Increase (annual)
PG&E	\$276	83%	\$304	17%	\$373	35%
SCE	\$243	43%	\$243	0%	\$243	0%
SDG&E	\$81	30%	\$91	12%	\$106	16%
SCG	\$48	47%	\$61	27%	\$73	20%
Total	\$648		\$699		\$795	



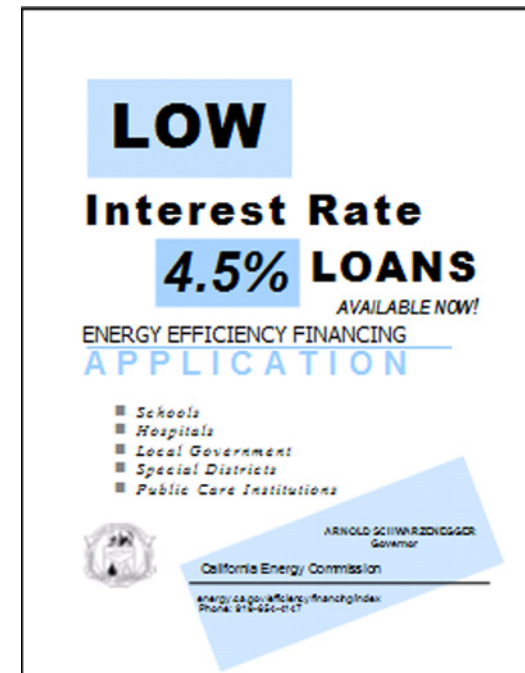
Energy Efficiency Programs for Public Agencies

- Public Agency = local governments, special districts, school districts, colleges, hospitals and public care institutions
 - ☑ Low interest rate loans
 - ☑ Technical assistance for existing and planned facilities
 - ◆ Energy Partnership Program
 - ◆ Bright Schools Program

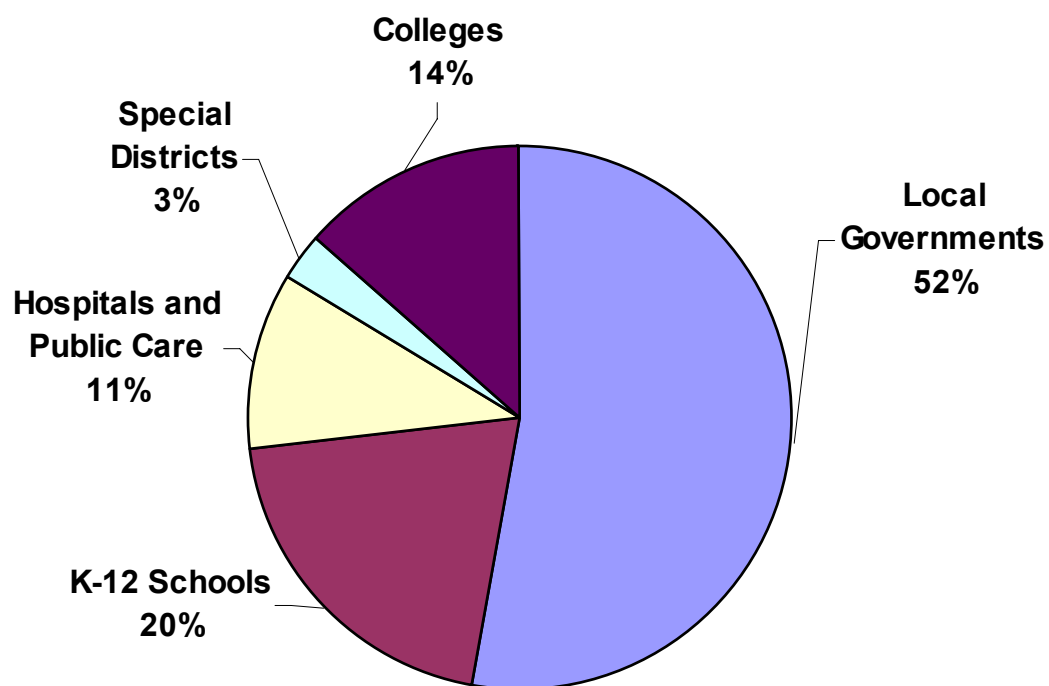


Energy Efficiency Funding Status

- Over \$40 million available
- Interest rate is 4.5%--adjusted to 4.1% if projects are completed within one year
- Maximum simple payback 9.8 years
- Up to \$3 million per application—no minimum
- First come, first served

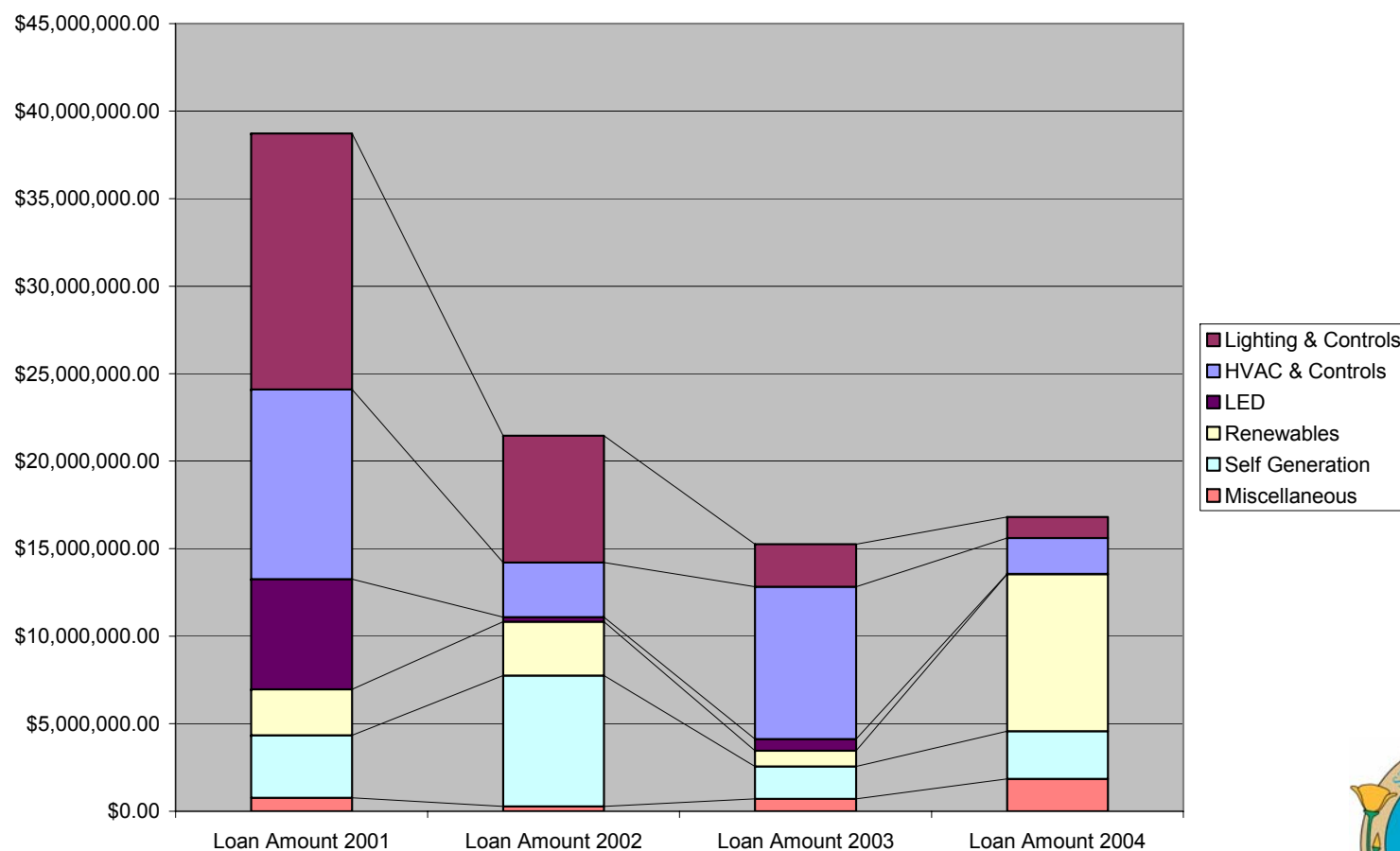


Loan Awards Totaling \$152 Million 1979 to the Present



Variety of Technologies used to Improve Energy Efficiency

LOAN AMOUNT



Alameda County

“We have the largest rooftop solar system in the nation!”

Matt Muniz, P.E., Energy Program Manager

“With the Energy Commission’s Energy Efficiency Financing Program we installed our 1.18 MW solar project at Santa Rita Jail. As a result we are now saving \$423,000 annually. The loan application was simple and straightforward.”

CEC Loans Totaling: \$4,214,848
Annual Cost Savings: \$423,000
Simple Payback: 9.9 years



Butte County Photovoltaic System

County facilities: East and West Facility, Admin. Building

Three PV systems with 1.18
MW DC (or 995kW AC)
capacity

Financial Information

- \$4.2 million PG&E rebate
- \$3.2 million CEC low interest loan
- \$1.0 million Butte County fund



San Francisco Installs LED Traffic Signals

“Our annual electricity for traffic signals has been reduced from approximately \$1.4 million a year to approximately \$400,000 a year.”

- LED traffic modules consume 80 to 90 percent less electricity.
- The old incandescent lamps were replaced annually, while most LED modules last from four to seven years. The yellow LED modules last even longer.

CEC Loans: \$3,392,216

Annual Cost Savings: \$1,000,000

Simple Payback: 3.3 years



City of Redlands

“Simple paperwork made applying for a loan very easy.”

Doug Headrick, PE, Chief of Water Resources

“The Energy Commission’s loan program is the most streamlined and simple compared to other financing programs. It worked seamlessly with our landfill gas project.”

CEC Loan Amount: \$1.5 million

Annual Cost Savings: \$325,000

Simple Payback: 4.6 years



City of San Carlos

“The indoor comfort problems at city hall have virtually been eliminated!”

Richard Averett, Finance Director

“The Energy Commission’s low interest loan program helped the city make upgrades to our city hall HVAC equipment...This new upgrade allows the city to provide a more comfortable environment for the employees and the public and also saves us money on our utility bills.”



CEC Loan: \$657,303

Annual Cost Savings: \$81,151

Simple Payback: 8.1 years



Willits Unified School District

“ Our District now has a heightened awareness of energy savings and related cost Savings.” Steve Jorgensen, District Superintendent

“ Faced with budget issues, the District was determined to realize savings by reducing energy use. Thanks to a low interest loan from the Energy Commission we were able to install energy efficient lighting and HVAC units throughout the District.”

CEC Loan: \$106,777

Annual Cost Savings: \$14,600

Simple Payback: 7 years



Los Angeles Pierce College

“We have reduced our operating cost and our dependence on purchased electricity!”

Tim Oliver, Vice President Administrative Services

“The college is using cutting edge on-site generation technologies such as photovoltaic and low emission microturbine cogeneration to supply part of the electricity needs while saving energy costs. This is great!”

CEC Loan: \$1,208,375

Annual Cost Savings: \$142,120

Simple Payback: 8.5 years



College of the Canyons

“The college implemented all recommended projects!”

James C. Schrage, Dean, Physical Plant and Facilities Planning

“CEC financing allowed us to install many efficiency measures including a cogeneration system for our pool. The energy savings of these projects have exceeded our expectations.”

CEC Loan: \$1,317,000

Annual Cost Savings: \$156,930

Simple Payback: 8.4 years



Technical Assistance Programs --Overcoming Barriers



Bright Schools Program

Public School Districts and Nonprofit Schools

- Experienced engineering consultants provide:
 - ☑ Energy audits and studies to identify and evaluate cost effective energy projects for existing and planned facilities
 - ☑ New construction/modernization design review
 - ☑ Project implementation assistance
 - ☑ Contractor selection and bid specification assistance

Energy Commission pays up to \$20,000 of our consultant's cost



Energy Partnership Program

Local Governments, Hospitals, Colleges,
Special Districts, Public Care

- Experienced engineering consultants provide:
 - ☑ Energy audits and studies to identify and evaluate cost effective energy projects for existing and planned facilities
 - ☑ New construction design reviews
 - ☑ Project implementation assistance
 - ☑ Contractor selection and bid specification assistance

Energy Commission pays a portion of our consultant's cost



Websites

- **Energy Efficiency Financing Program**
 - www.energy.ca.gov/efficiency/financing
- **Energy Partnership Program**
 - www.energy.ca.gov/efficiency/partnership
- **Bright Schools Program**
 - www.energy.ca.gov/efficiency/brightschoools
- **Emerging Renewables Program Rebates**
 - www.consumerenergycenter.org/erprebate/index.html



Questions?

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